

Tech Report

Section	Info
2.8.5.4 Wildlife	<p>Surveys conducted only in the PAA included other vertebrate species of concern tracked by the South Dakota Natural Heritage Program (SDNHP), as well as bats, small mammals, lagomorphs, prairie dog (<i>Cynomys</i> spp.) colonies, breeding birds, predators, and herptiles (reptiles and amphibians).</p> <p>Ex. 5 Deliberative Process (DP)</p>
	One black-tailed prairie dog (<i>Cynomys ludovicianus</i>) colony is located in the northwestern corner of the PAA, and two others are present in the southwestern portion of the one-mile perimeter
	<p>Infrequent, incidental bat sightings (species unknown) occurred during nocturnal amphibian surveys and spotlighting efforts at targeted ponds in the PAA during the baseline period.</p> <p>Ex. 5 Deliberative Process (DP)</p>
2.8.5.4.4 Raptors	
Table 2.8-21:	Raptor Nest Locations and Activity in and Within 1 Mile of the Proposed Action Area during Baseline Wildlife Surveys from mid-July 2007 through early August 2008
Table 2.8-22:	<p>Breeding Bird Species Richness and Relative Abundance in Six Habitat Types within the Proposed Action Area in June 2008</p> <p>Ex. 5 Deliberative Process (DP)</p>
2.8.5.4.7 Waterfowl, Shorebirds	Ex. 5 Deliberative Process (DP)
2.8.5.5 Threatened, Endangered, or Candidate Species and Species	No federally listed vertebrate species were documented in the project survey area (current PAA and one-mile perimeter) during the year-long survey period.

Tracked by SDNHP 2.8.5.5.1 Federally Listed Species	
2.8.5.5.2 State Listed Species	<p>The State of South Dakota lists 23 vertebrate species as threatened or endangered:</p> <ul style="list-style-type: none"> • Threatened: 4 fish, 4 birds, 2 mammals, 1 snake, and 1 turtle • Endangered: 5 fish, 4 birds, 1 mammal, and 1 snake <p>The current list of these state species is available on the SDGFP website: [HYPERLINK "https://gfp.sd.gov/threatened-endangered/"] List by county: [HYPERLINK "https://gfp.sd.gov/userdocs/docs/ThreatenedCountyList.pdf"]</p> <div> <h2>Ex. 5 Deliberative Process (DP)</h2> </div>
2.8.5.5.3 Species Tracked by SDNHP	<p>South Dakota Natural Heritage Program [HYPERLINK "https://gfp.sd.gov/natural-heritage-program/"] Rare Plants & Rare Animals</p> <p>Six vertebrate sensitive species or species of local concern other than the bald eagle were documented within the current (September 2008 configuration) PAA during the baseline survey period: the long-billed curlew, great blue heron, golden eagle, Cooper’s hawk, American white pelican, and long-eared owl.</p>
Table 2.8-28:	<p>Summary of Fish Size and Abundance</p> <div> <h2>Ex. 5 Deliberative Process (DP)</h2> </div>
2.8.5.6.1.2.3.2 Threatened and Endangered Aquatic Species	<p>No threatened or endangered aquatic species are known to inhabit Beaver Creek, particularly within 1.0 mile of the permit boundary.</p>
7.2.7.2 Potential Ecological Effects of Operations on Wildlife and Fisheries	<div> <h2>Ex. 5 Deliberative Process (DP)</h2> </div> <div> <h2>Ex. 5 Deliberative Process (DP)</h2> </div>

7.2.7.5 Potential Ecological Effects of Operations on Raptors	<p>Eight intact raptor nests were documented within the project survey area (PAA and 2.0 km perimeter) during 2008; the mid-July 2007 start date for this project precluded nesting data from being collected last year. Six of the eight nest sites are within the PAA, with the remaining two located in the one-mile perimeter.</p> <p>USFWS guidelines recommend a non-disturbance buffer of 0.25 to 1.0 mile around active raptor nests for species known to nest, or suspected of nesting, in the PAA (USFWS, 1998).</p>
	<p>Based on the location of known nest sites relative to future construction sites, no raptor nests will be physically disturbed by the project during either construction or operations. Additionally, Powertech (USA) has incorporated the baseline wildlife information into their planning process and sited all plant facilities (areas of greatest sustained future disturbance) outside the recommended buffer zone for all raptor nests in the PAA, including the bald eagle nest site. Some new infrastructure will be located within the suggested buffer areas.</p> <p>However, pipelines will be buried, and new overhead power lines will be constructed using designs and specifications to reduce injuries and mortalities on overhead power lines. Center-pivot structures can be put into place prior to the nesting season, and run automatically with little human contact once they are turned on. Additionally, new roads, power lines, and pipelines will be constructed in the same corridors to the extent possible to reduce overall disturbance, and in existing corridors when available to minimize new surface disturbance.</p>
7.2.7.7 Other Birds	The project could potentially impact nine avian species tracked by SDNHP that are known to, or could potentially occur as seasonal or year-round residents. Direct impacts could include injury or mortality due to encounters with vehicles or heavy equipment during construction or maintenance operations. Indirect impacts could include habitat loss or fragmentation, and increased noise and activity that may temporarily deter use of the area by some species. Surface disturbance would be relatively minimal and would be greatest during construction.
7.2.7.8 Waterfowl and Shorebirds	Construction and operation of the uranium project would have a negligible effect on migrating and breeding waterfowl and shorebirds. Existing habitat is limited and seasonally available in the PAA, so it does not currently support large groups or populations of these species. Multiple approaches are being considered to minimize impacts to wildlife that may be associated with the operation of the ponds. Any new treated water sources could enhance current habitat conditions for these species, though such effects may be temporary in nature.
7.2.7.9 Reptiles and Amphibians	As with waterfowl, potential habitat for aquatic and semi-aquatic amphibians and reptiles, is limited within the PAA and occurs primarily along Beaver Creek in the western portion of the area. Other water bodies are ephemeral, and thus offer only short-term habitat. Activities associated with the project are not expected to disturb existing surface water or alter the topography in the area. Those species residing in rocky outcrops located in potential disturbance areas could be impacted by construction and maintenance operations. However, few non-aquatic herptile species were observed in the PAA and surrounding perimeter. Any impacts that would occur would affect individuals, but would not likely impact the population as a whole.
7.2.7.10 Fish and Macro-Invertebrates	The planned locations for new facilities and infrastructure do not overlap any perennial aquatic features, no loss of aquatic habitat would occur as the result of their construction. The risk of impaired water quality will be reduced or avoided through project siting, and implementation of standard construction erosion and sediment control measures. The location of project

	facilities (CPP, SF, pipelines, new roads and power lines), as well as the proposed land application sites (center pivot irrigation sites), will avoid direct impacts to perennial streams.
7.2.7.11 Potential Ecological Effects of Operations on Threatened, Endangered, or Candidate Species and Species Tracked by SDNHP 7.2.7.11.1 Federally Listed Species	As described in the preceding sections of this document, no federally listed vertebrate species were documented in the project survey area (current PAA and 2 km perimeter) during the yearlong survey period, or during previous targeted surveys conducted for the original claims (TVA 1979). Additionally, the USFWS has issued a block clearance for black-footed ferrets in all black-tailed prairie dog colonies in South Dakota except northern Custer County, and in the entire neighboring state of Wyoming. That clearance indicates that ferrets do not currently, and are not expected to, occupy the PAA. Only one small black-tailed prairie dog colony was present in the PAA itself during the 2007-2008 baseline surveys, and local landowners are actively working to remove the animals from their lands. Consequently, the proposed project will have no direct, indirect, or cumulative effects on black-footed ferrets.
7.2.7.11.2 Potential Ecological Effects of Operations on State Listed Species	ISL production within the project may affect, but is not likely to adversely affect bald eagles, the only state listed species known to inhabit the PAA. Bald eagles were documented at winter roosts and an active nest within the PAA for this project. However, most roost sites and the lone nest site are at least 1.0 mile from the nearest planned facility associated with this project.
7.2.7.11.3 Potential Ecological Effects of Tracked by SDNHP	Ten terrestrial species tracked by the SDNHP were recorded during baseline surveys for the uranium project, including the bald eagle. Seven of the ten were observed within (or flying over) the PAA, and three were seen in the 2.0 km perimeter. One additional species, the plains topminnow , was observed in Beaver Creek and the Cheyenne River, at least 1.0 mile outside the PAA. Three SDNHP species are known or suspected to have nested in the PAA in 2008. However, two of the three nest sites are at least 1.0 mile from the nearest planned new facility, and all three were closer to existing disturbances in 2008 than they would be to new activities outside those existing areas. 1. Bald Eagle, 2. Long-eared Owl, 3. Merlin, (from Table 2.8-2.8)
2.8.5.4.7 Waterfowl, Shorebirds	Eight species associated specifically with water and/or wetlands were observed during the baseline inventories: the American white pelican (<i>Pelecanus erythrorhynchos</i>), great blue heron (<i>Ardea herodias</i>), Canada goose (<i>Branta canadensis</i>), mallard (<i>Anas platyrhynchos</i>), American wigeon (<i>Anas americana</i>), killdeer (<i>Charadrius vociferus</i>), long-billed curlew, and upland sandpiper (<i>Bartramia longicauda</i>). The pelican, heron, and curlew are tracked by the SDNHP.

2.8.5.5.3 Species Tracked by SDNHP	<p>Seven vertebrate sensitive species or species of local concern were documented within the current (September 2008 configuration) PAA during the baseline survey period:</p> <ol style="list-style-type: none"> 1. the long-billed curlew, 2. great blue heron, 3. golden eagle, 4. Cooper's hawk, 5. American white pelican, 6. long-eared owl, 7. bald eagle <p style="text-align: center;">Ex. 5 Deliberative Process (DP)</p> <p>Four additional vertebrate species of concern were documented at least once each in the one-mile perimeter: 1. the northern river otter, 2. merlin, 3. Clark's nutcracker, and 4. plains topminnow</p>
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Table 2.8-22: Breeding Bird Species **Ex. 5 Deliberative Process (DP)**

1. Western meadowlark (*Sturnella neglecta*)
2. Mourning dove (*Zenaida macroura*)
3. Long-billed curlew (*Numenius americanus*)
4. Chipping sparrow (*Spizella passerina*)
5. Lark sparrow (*Chondestes grammacus*)
6. Grasshopper sparrow (*Ammodramus savannarum*)
7. Northern flicker (*Colaptes auratus*)
8. Mountain bluebird (*Sialia currucoides*)
9. Brewer's blackbird (*Euphagus cyanocephalus*)
10. Spotted towhee (*Pipilo maculatus*)
11. American kestrel (*Falco sparverius*)
12. Brown-headed cowbird (*Molothrus ater*)
13. House wren (*Troglodytes aedon*)
14. Yellow warbler (*Dendroica petechia*)
15. Say's phoebe (*Sayornis saya*)
16. Bullock's oriole (*Icterus bullockii*)
17. Unknown flycatcher
18. Eastern kingbird (*Tyrannus tyrannus*)
19. Red-tailed hawk (*Buteo jamaicensis*)
20. Black-capped chickadee (*Poecile atricapillus*)
21. Yellow-rumped warbler (*Dendroica coronata*)
22. European starling (*Sturnus vulgaris*)
23. Great horned owl (*Bubo virginianus*)
24. Vesper sparrow (*Pooecetes gramineus*)
25. American crow (*Corvus brachyrhynchos*)

26. Red-headed woodpecker (*Melanerpes erythrocephalus*)
27. Rock wren (*Salpinctes obsoletus*)
28. Western kingbird (*Tyrannus verticalis*)
29. American robin (*Turdus migratorius*)
30. Common nighthawk (*Chordeiles minor*)
31. Indigo bunting (*Passerina cyanea*)
32. Killdeer (*Charadrius vociferous*)
33. Lazuli bunting (*Passerina amoena*)
34. Western wood peewee (*Contopus sordidulus*)
35. Yellow-breasted chat (*Icteria virens*)
36. Red-winged blackbird (*Agelaius phoeniceus*)
37. Turkey vulture (*Carthartes aura*)

SEIS

1.7.3.7 Coordination With South Dakota Game Fish and Parks

SDGFP expressed a major concern: the potential effects on birds flying through the proposed project area and drinking at exposed wastewater evaporation ponds. SDGFP suggested two measures to mitigate effects on bird populations: (i) testing to determine the toxicity of constituents in the evaporation ponds and (ii) using netting and fencing to restrict wildlife access to exposed ponds. SDGFP also noted the need for testing and monitoring of soils at the proposed site to identify any buildup of salts and metals that could result from proposed land application of treated wastewater.

NRC Safety Evaluation Report

No requirements related to SD GFP concerns listed in SEIS. Monitoring of wells around ponds for leak detection, but no pond WQ sampling. See references to fences. They are for site security but also prevent wildlife access to radioactive materials or by-product materials, including ponds. Mentions impacts to wildlife related to ACL application and disturbed land reclamation.

August 10, 2009 Supplemental Information

Ex. 5 Deliberative Process (DP)

August 11, 2010 ER RAI Response

Ex. 5 Deliberative Process (DP)

December 2010 RAI Response

Ex. 5 Deliberative Process (DP)

2010.12.23 Response to NRC RAI_surface & subsurface water quality – **Ex. 5 Deliberative Process (DP)**

2010.12.23 Response to NRC RAI_various – **Ex. 5 Deliberative Process (DP)**

ER_RAI_Response_Aug11_2010

Ex. 5 Deliberative Process (DP)

June 2011 RAI Response